

Notice of Allowability

Application No.

10/814,585

Examiner

Eisa B. Elhilo

Applicant(s)

PLOS ET AL.

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on October 4, 2006.
2. ☒ The allowed claim(s) is/are 28-30,33-52,55-60,63 and 64.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 10/4/2006
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 11/7/2006.

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____

Eisa Elhilo
Primary Examiner
Art Unit 1751

11/9/06

DETAILED ACTION

1 This action is responsive to the amendment filed on October 4, 2006.

EXAMINER'S AMENDMENT

2 An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thalia V. Warnement on November 7, 2006.

In the claims:

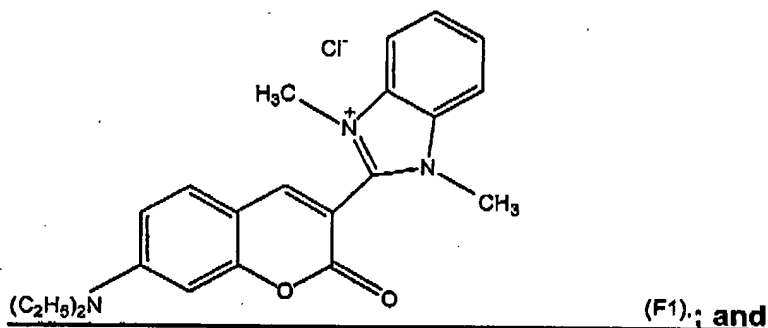
Please cancel claims 31-32, 53-54 and 61-62.

In claim 28, in page 2, delete the last line.

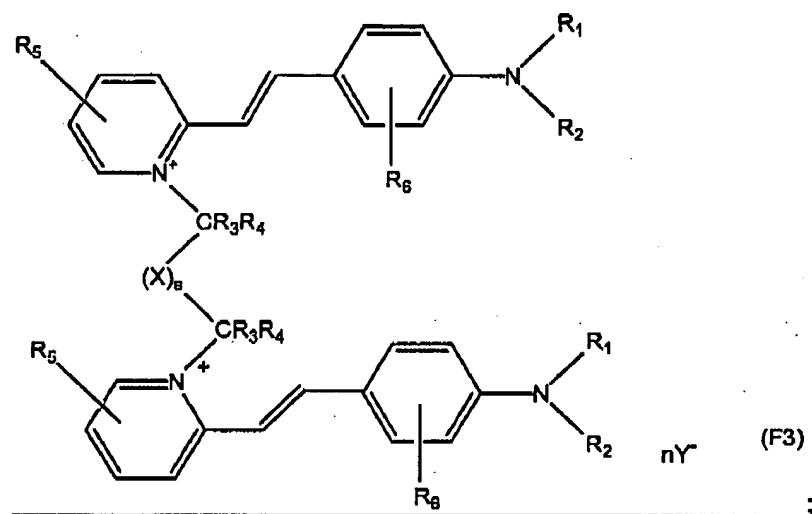
In claim 28, in page 3, delete the formula.

In claim 28, in page 2, after line 13 insert --

wherein the at least one fluorescent dye is chosen from:



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wherein:

R₁ and R₂, which may be identical or different, are each chosen from:

- a hydrogen atom;
- linear or branched alkyl radicals comprising 1 to 10 carbon atoms, optionally interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;
- aryl or arylalkyl radicals, the aryl group comprising 6 carbon atoms and the alkyl radical comprising 1 to 4 carbon atoms; the aryl radical optionally being substituted with at least one linear or branched alkyl radical comprising 1 to 4 carbon atoms optionally interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;

R₁ and R₂ may optionally be linked so as to form a heterocycle with the nitrogen atom and may comprise at least one other hetero atom, the heterocycle optionally being substituted with at least one linear or branched alkyl radical and optionally being interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom; or

R₁ or R₂ may optionally be engaged in a heterocycle comprising the nitrogen atom and one of the carbon atoms of the phenyl group bearing the nitrogen atom;

R₃ and R₄, which may be identical or different, are each chosen from a hydrogen atom and alkyl radicals comprising 1 to 4 carbon atoms;

R₅, which may be identical or different, is chosen from a hydrogen atom, a halogen atom, and linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally interrupted with at least one hetero atom;

R₆, which may be identical or different, is chosen from a hydrogen atom; a halogen atom; linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom and/or substituted with at least one halogen atom;

X is chosen from:

- linear or branched alkyl radicals comprising 1 to 14 carbon atoms and alkenyl radicals comprising 2 to 14 carbon atoms, optionally interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;

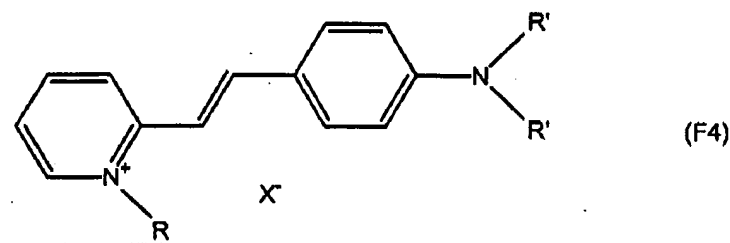
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- 5- or 6-membered heterocyclic radicals optionally substituted with at least one linear or branched alkyl radical comprising 1 to 14 carbon atoms, optionally substituted with at least one hetero atom; with at least one linear or branched aminoalkyl radical comprising 1 to 4 carbon atoms, optionally substituted with at least one hetero atom; or with at least one halogen atom;
- fused or non-fused aromatic or diaromatic radicals, optionally separated with an alkyl radical comprising 1 to 4 carbon atoms, wherein the aryl radical(s) of the aromatic or diaromatic radicals is optionally substituted with at least one halogen atom or with at least one alkyl radical comprising 1 to 10 carbon atoms optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom;
- dicarbonyl radicals;
- the group X optionally bearing one or more cationic charges;

a equals 0 or 1;

Y, which may be identical or different, is chosen from organic or inorganic anions; and

n is an integer at least equal to 2 and at most equal to the number of cationic charges present in the fluorescent compound; and



wherein:

R is chosen from a methyl or ethyl radical;

R' is a methyl radical; and

X' is chosen from chloride, iodide, sulphate, methosulphate, acetate, and perchlorate anions. — —

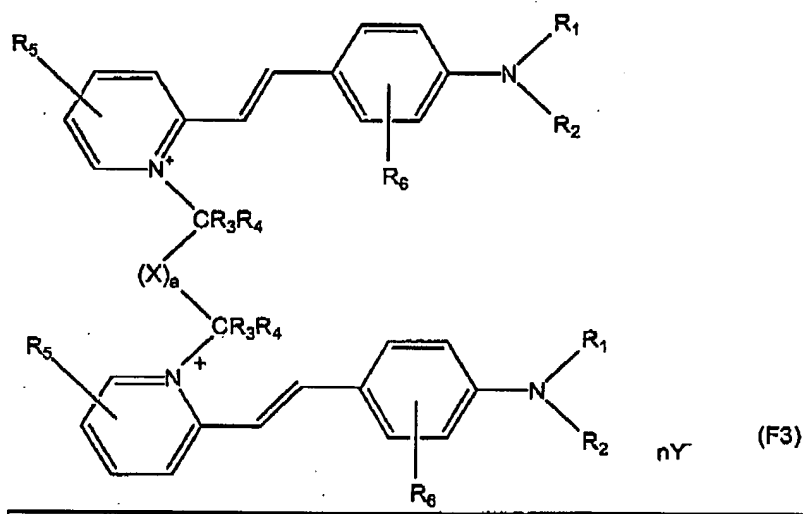
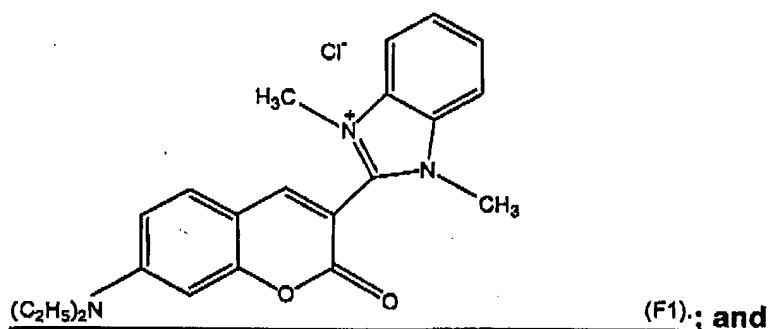
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In claim 47, in page 12, delete line 7.

In claim 47, in page 12, delete the formula.

In claim 47, in page 12, after line 6, insert --

wherein the at least one fluorescent dye is chosen from:



wherein:

R₁ and R₂, which may be identical or different, are each chosen from:

- **a hydrogen atom;**
- **linear or branched alkyl radicals comprising 1 to 10 carbon atoms,**
optionally interrupted and/or substituted with at least one hetero
atom and/or group comprising at least one hetero atom and/or
substituted with at least one halogen atom;

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- aryl or arylalkyl radicals, the aryl group comprising 6 carbon atoms and the alkyl radical comprising 1 to 4 carbon atoms; the aryl radical optionally being substituted with at least one linear or branched alkyl radical comprising 1 to 4 carbon atoms optionally interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;

R₁ and R₂ may optionally be linked so as to form a heterocycle with the nitrogen atom and may comprise at least one other hetero atom, the heterocycle optionally being substituted with at least one linear or branched alkyl radical and optionally being interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom; or

R₁ or R₂ may optionally be engaged in a heterocycle comprising the nitrogen atom and one of the carbon atoms of the phenyl group bearing the nitrogen atom;

R₃ and R₄, which may be identical or different, are each chosen from a hydrogen atom and alkyl radicals comprising 1 to 4 carbon atoms;

R₅, which may be identical or different, is chosen from a hydrogen atom, a halogen atom, and linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally interrupted with at least one hetero atom;

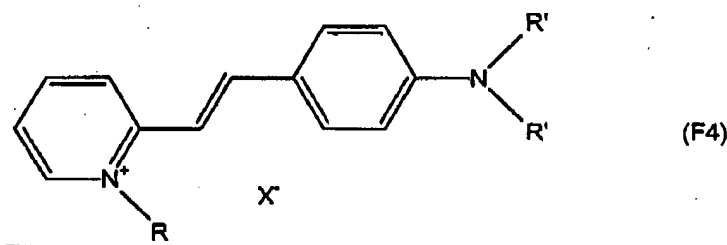
R₆, which may be identical or different, is chosen from a hydrogen atom; a halogen atom; linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally substituted and/or interrupted with at least one hetero atom and/or

group bearing at least one hetero atom and/or substituted with at least one halogen atom;

X is chosen from:

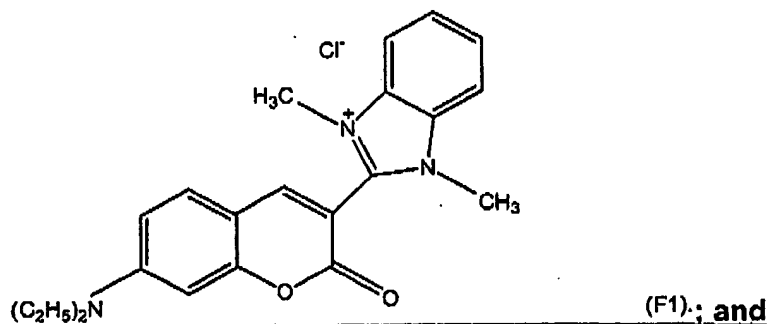
- linear or branched alkyl radicals comprising 1 to 14 carbon atoms and alkenyl radicals comprising 2 to 14 carbon atoms, optionally interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;
- 5- or 6-membered heterocyclic radicals optionally substituted with at least one linear or branched alkyl radical comprising 1 to 14 carbon atoms, optionally substituted with at least one hetero atom; with at least one linear or branched aminoalkyl radical comprising 1 to 4 carbon atoms, optionally substituted with at least one hetero atom; or with at least one halogen atom;
- fused or non-fused aromatic or diaromatic radicals, optionally separated with an alkyl radical comprising 1 to 4 carbon atoms, wherein the aryl radical(s) of the aromatic or diaromatic radicals is optionally substituted with at least one halogen atom or with at least one alkyl radical comprising 1 to 10 carbon atoms optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom;
- dicarbonyl radicals;
- the group X optionally bearing one or more cationic charges;

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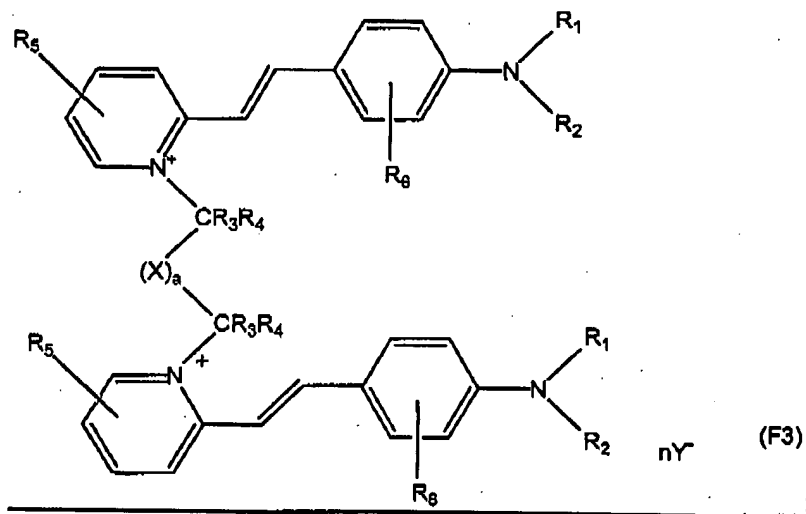
a equals 0 or 1;Y, which may be identical or different, is chosen from organic or inorganic anions; andn is an integer at least equal to 2 and at most equal to the number of cationic charges present in the fluorescent compound; andwherein:R is chosen from a methyl or ethyl radical;R' is a methyl radical; andX- is chosen from chloride, iodide, sulphate, methosulphate, acetate, and perchlorate anions; --

In claim 55, in page 19, delete line 8 and delete the formula under line 8.

In claim 55, in page 19, after line 7, insert --

wherein the at least one fluorescent dye is chosen from:

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wherein:

R₁ and R₂, which may be identical or different, are each chosen from:

- a hydrogen atom;
- linear or branched alkyl radicals comprising 1 to 10 carbon atoms, optionally interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;
- aryl or arylalkyl radicals, the aryl group comprising 6 carbon atoms and the alkyl radical comprising 1 to 4 carbon atoms; the aryl radical optionally being substituted with at least one linear or branched alkyl radical comprising 1 to 4 carbon atoms optionally interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;

R₁ and R₂ may optionally be linked so as to form a heterocycle with the nitrogen atom and may comprise at least one other hetero atom, the heterocycle optionally being substituted with at least one linear or branched alkyl radical and optionally being interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom; or

R₁ or R₂ may optionally be engaged in a heterocycle comprising the nitrogen atom and one of the carbon atoms of the phenyl group bearing the nitrogen atom;

R₃ and R₄, which may be identical or different, are each chosen from a hydrogen atom and alkyl radicals comprising 1 to 4 carbon atoms;

R₅, which may be identical or different, is chosen from a hydrogen atom, a halogen atom, and linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally interrupted with at least one hetero atom;

R₆, which may be identical or different, is chosen from a hydrogen atom; a halogen atom; linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom and/or substituted with at least one halogen atom;

X is chosen from:

- linear or branched alkyl radicals comprising 1 to 14 carbon atoms and alkenyl radicals comprising 2 to 14 carbon atoms, optionally

interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;

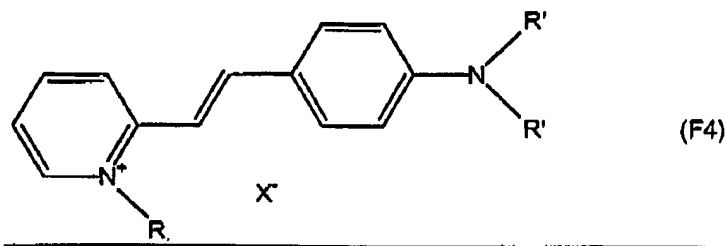
- 5- or 6-membered heterocyclic radicals optionally substituted with at least one linear or branched alkyl radical comprising 1 to 14 carbon atoms, optionally substituted with at least one hetero atom; with at least one linear or branched aminoalkyl radical comprising 1 to 4 carbon atoms, optionally substituted with at least one hetero atom; or with at least one halogen atom;
- fused or non-fused aromatic or diaromatic radicals, optionally separated with an alkyl radical comprising 1 to 4 carbon atoms, wherein the aryl radical(s) of the aromatic or diaromatic radicals is optionally substituted with at least one halogen atom or with at least one alkyl radical comprising 1 to 10 carbon atoms optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom;
- dicarbonyl radicals;
- the group X optionally bearing one or more cationic charges;

a equals 0 or 1;

Y, which may be identical or different, is chosen from organic or inorganic anions; and

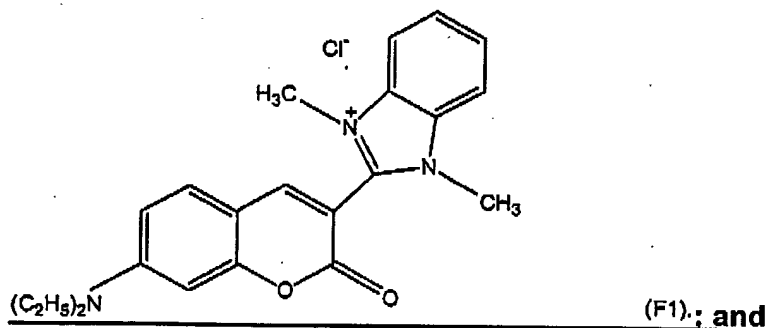
n is an integer at least equal to 2 and at most equal to the number of cationic charges present in the fluorescent compound; and

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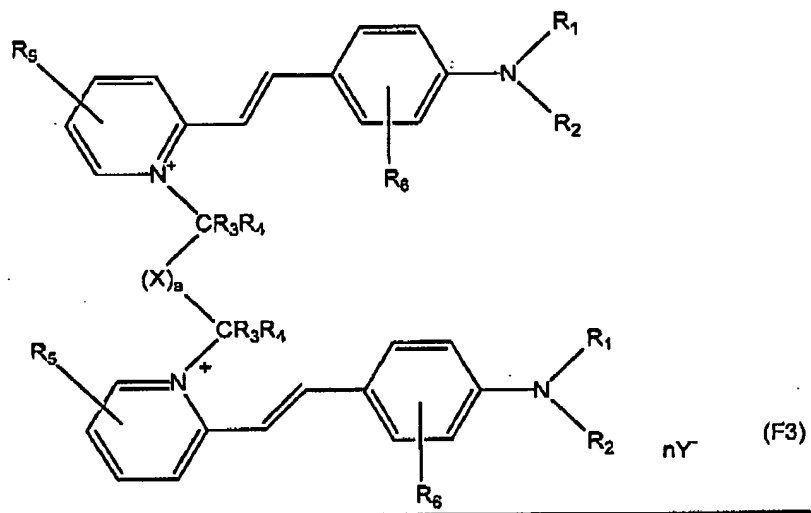
**wherein:****R is chosen from a methyl or ethyl radical;****R' is a methyl radical; and****X is chosen from chloride, iodide, sulphate, methosulphate, acetate, and perchlorate anions; and --**

In claim 63, in page 26, delete line 5 and delete the formula under line 5.

In claim 63, in page 26, after line 4, insert --

wherein the at least one fluorescent dye is chosen from:

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wherein:

R₁ and R₂, which may be identical or different, are each chosen from:

- a hydrogen atom;
- linear or branched alkyl radicals comprising 1 to 10 carbon atoms,
optionally interrupted and/or substituted with at least one hetero
atom and/or group comprising at least one hetero atom and/or
substituted with at least one halogen atom;
- aryl or arylalkyl radicals, the aryl group comprising 6 carbon atoms
and the alkyl radical comprising 1 to 4 carbon atoms; the aryl radical
optionally being substituted with at least one linear or branched alkyl
radical comprising 1 to 4 carbon atoms optionally interrupted and/or
substituted with at least one hetero atom and/or group comprising at
least one hetero atom and/or substituted with at least one halogen
atom;

R₁ and R₂ may optionally be linked so as to form a heterocycle with the nitrogen atom and may comprise at least one other hetero atom, the heterocycle optionally being substituted with at least one linear or branched alkyl radical and optionally being interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom; or

R₁ or R₂ may optionally be engaged in a heterocycle comprising the nitrogen atom and one of the carbon atoms of the phenyl group bearing the nitrogen atom;

R₃ and R₄, which may be identical or different, are each chosen from a hydrogen atom and alkyl radicals comprising 1 to 4 carbon atoms;

R₅, which may be identical or different, is chosen from a hydrogen atom, a halogen atom, and linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally interrupted with at least one hetero atom;

R₆, which may be identical or different, is chosen from a hydrogen atom; a halogen atom; linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom and/or substituted with at least one halogen atom;

X is chosen from:

- linear or branched alkyl radicals comprising 1 to 14 carbon atoms and alkenyl radicals comprising 2 to 14 carbon atoms, optionally

interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;

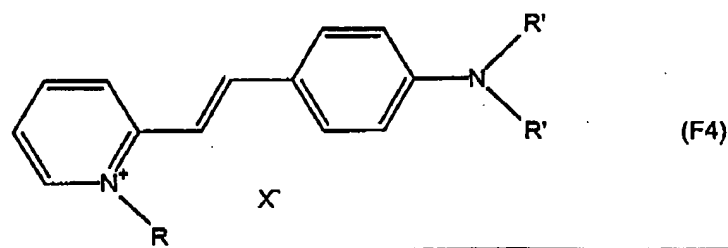
- 5- or 6-membered heterocyclic radicals optionally substituted with at least one linear or branched alkyl radical comprising 1 to 14 carbon atoms, optionally substituted with at least one hetero atom; with at least one linear or branched aminoalkyl radical comprising 1 to 4 carbon atoms, optionally substituted with at least one hetero atom; or with at least one halogen atom;
- fused or non-fused aromatic or diaromatic radicals, optionally separated with an alkyl radical comprising 1 to 4 carbon atoms, wherein the aryl radical(s) of the aromatic or diaromatic radicals is optionally substituted with at least one halogen atom or with at least one alkyl radical comprising 1 to 10 carbon atoms optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom;
- dicarbonyl radicals;
- the group X optionally bearing one or more cationic charges;

a equals 0 or 1;

Y, which may be identical or different, is chosen from organic or inorganic anions; and

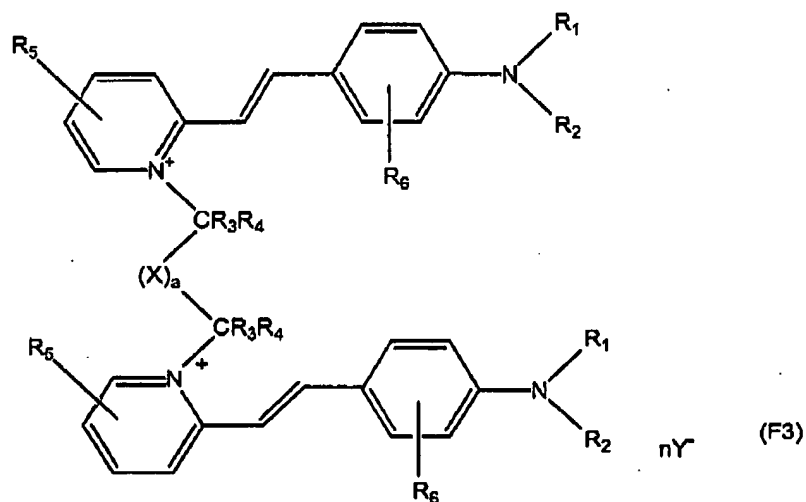
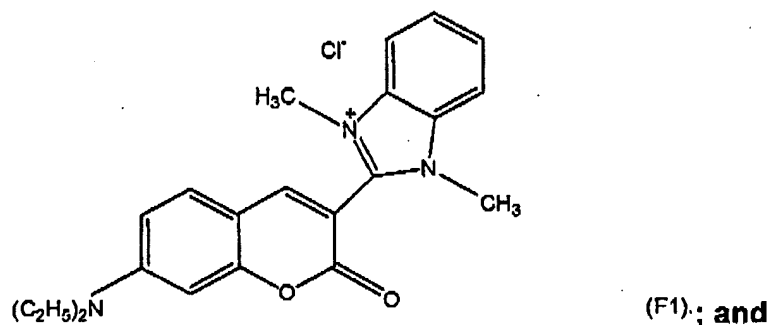
n is an integer at least equal to 2 and at most equal to the number of cationic charges present in the fluorescent compound; and

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**wherein:****R is chosen from a methyl or ethyl radical;****R' is a methyl radical; and****X⁻ is chosen from chloride, iodide, sulphate, methosulphate, acetate, and perchlorate anions; and --**

In claim 64, in page 27, delete line 5 and the formula under line 5.

In claim 64, in page 27, after line 4, insert --

wherein the at least one fluorescent dye is chosen from:

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wherein:

R₁ and R₂, which may be identical or different, are each chosen from:

- a hydrogen atom;
- linear or branched alkyl radicals comprising 1 to 10 carbon atoms,
optionally interrupted and/or substituted with at least one hetero
atom and/or group comprising at least one hetero atom and/or
substituted with at least one halogen atom;
- aryl or arylalkyl radicals, the aryl group comprising 6 carbon atoms
and the alkyl radical comprising 1 to 4 carbon atoms; the aryl radical
optionally being substituted with at least one linear or branched alkyl
radical comprising 1 to 4 carbon atoms optionally interrupted and/or
substituted with at least one hetero atom and/or group comprising at
least one hetero atom and/or substituted with at least one halogen
atom;

R₁ and R₂ may optionally be linked so as to form a heterocycle with the
nitrogen atom and may comprise at least one other hetero atom, the
heterocycle optionally being substituted with at least one linear or
branched alkyl radical and optionally being interrupted and/or
substituted with at least one hetero atom and/or group comprising at
least one hetero atom and/or substituted with at least one halogen
atom; or

R₁ or R₂ may optionally be engaged in a heterocycle comprising the nitrogen atom and one of the carbon atoms of the phenyl group bearing the nitrogen atom;

R₃ and R₄, which may be identical or different, are each chosen from a hydrogen atom and alkyl radicals comprising 1 to 4 carbon atoms;

R₅, which may be identical or different, is chosen from a hydrogen atom, a halogen atom, and linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally interrupted with at least one hetero atom;

R₆, which may be identical or different, is chosen from a hydrogen atom; a halogen atom; linear or branched alkyl radicals comprising 1 to 4 carbon atoms, optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom and/or substituted with at least one halogen atom;

X is chosen from:

- linear or branched alkyl radicals comprising 1 to 14 carbon atoms and alkenyl radicals comprising 2 to 14 carbon atoms, optionally interrupted and/or substituted with at least one hetero atom and/or group comprising at least one hetero atom and/or substituted with at least one halogen atom;
- 5- or 6-membered heterocyclic radicals optionally substituted with at least one linear or branched alkyl radical comprising 1 to 14 carbon atoms, optionally substituted with at least one hetero atom; with at least one linear or branched aminoalkyl radical comprising 1 to 4

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carbon atoms, optionally substituted with at least one hetero atom;

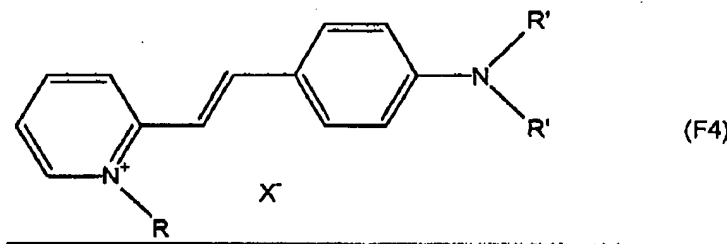
or with at least one halogen atom;

- fused or non-fused aromatic or diaromatic radicals, optionally separated with an alkyl radical comprising 1 to 4 carbon atoms, wherein the aryl radical(s) of the aromatic or diaromatic radicals is optionally substituted with at least one halogen atom or with at least one alkyl radical comprising 1 to 10 carbon atoms optionally substituted and/or interrupted with at least one hetero atom and/or group bearing at least one hetero atom;
- dicarbonyl radicals;
- the group X optionally bearing one or more cationic charges;

a equals 0 or 1;

Y, which may be identical or different, is chosen from organic or inorganic anions; and

n is an integer at least equal to 2 and at most equal to the number of cationic charges present in the fluorescent compound; and



wherein:

R is chosen from a methyl or ethyl radical;

R' is a methyl radical; and

X is chosen from chloride, iodide, sulphate, methosulphate, acetate, and perchlorate anions; and --

3 Claims 28-30, 33-52, 55-60 and 63-64 are allowed.

STATEMENT OF REASONS FOR ALLOWANCE

4 The following is an examiner's statement of reasons for allowance:

The closest prior art of record (US 2001/0054206 A1) alone or in combination with (US 5,961,667) does not teach or disclose a composition, a process for dyeing human keratin fibers, a process for coloring skin or a multi-compartment device for dyeing keratin fibers comprising at least one fluorescent dye of the claimed formulae F1, F3 or F4 in a combination with at least one complexing agent of the claimed elements. Accordingly, the claimed subject matter as a whole would not have been obvious to one having ordinary skill in the art of keratin fibers dyeing formulation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eisa B. Elhilo whose telephone number is (571) 272-1315. The examiner can normally be reached on M - F (8:00 -4:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Eisa Elhilo
Primary Examiner
Art Unit 1751

November 10, 2006